We claim:

1. A method for analyzing data pertaining to a plurality of financial instruments traded on a financial market, comprising the steps of:

(a) arranging the financial instrument data in an array of data elements wherein each data element of the array has a respective first dimensional index and a respective second dimensional index;

(b) detecting events of interest in said financial instrument data in the array;

(c) storing said detected events of interest as entries in an event array in binary format, the event array having the same dimensions as said financial instrument data array; and

(d) analyzing data in one array selected from the group consisting of said financial instrument data array and said event array to determine correlations between said detected events of interest.

2. The method of claim 1, wherein said financial instrument data array comprises an array of closing prices for said plurality of financial instruments over a plurality of time periods.

3. The method of claim 2, wherein said first dimensional index corresponds to said plurality of financial instruments and said second dimensional index corresponds to said plurality of time periods.

4. The method of claim 3, wherein said step of detecting events of interest comprises:

calculating a statistical mean and statistical standard deviation from a data population consisting of all of the data elements in said financial instrument data array having identical first dimensional indexes, for each of said first dimensional indexes; and

determining for each data element in said financial instrument data array whether said data element exceeds, by a predetermined number of said standard deviations, the mean of the data population and denominating such a data element an event.

5. The method of claim 4, wherein each one of the entries in said event array corresponds to a respective one of the data elements of the financial instrument data array and has the same first and second dimensional indexes as the corresponding data element in said financial instrument data array and wherein said storing said detected events of interests comprises storing a logical "one" at a location in said event array having the first and second dimensional indexes of the corresponding data element when the corresponding data element is denominated an event and storing a logical "zero" at the location in said event array having the first and second dimensional indexes of the corresponding data element when the corresponding data element is not denominated an event.

6. The method of claim 3, wherein said detecting events of interest comprises determining whether a first data element in said financial instrument data array exceeds, by a threshold amount, a second data element in said financial instrument data array, wherein said second data element has an identical first dimensional index as said first

data element and a second dimensional index corresponding to an earlier point in time than the second dimensional index of said first data element, and denominating said second data element an event.

7. The method of claim 6, wherein each one of the entries in said event array corresponds to a respective one of the data elements of the financial instrument data array and has the same first and second dimensional indexes as the corresponding data element in said financial instrument data array and wherein said storing said detected events of interests comprises storing a logical "one" at a location in said event array having the first and second dimensional indexes of the corresponding data element when the corresponding data element is denominated an event and storing a logical "zero" at the location in said event array having the first and second dimensional indexes of the corresponding data element when the corresponding data element is not denominated an event.

8. The method of claim 3, wherein said step of analyzing data comprises detecting said events of interest that are coactive and determining whether the number of coactive events is statistically significant.

9. The method of claim 8, wherein said step of detecting events of interest that are coactive comprises detecting instances where said events of interest are detected in at least a first and a second entry of said event array, wherein said second data entry has a first dimensional index distinct from the first dimensional index of said first entry

and wherein said first and second entries each have second dimensional indexes corresponding to a simultaneous time period.

10. The method of claim 9, wherein said coactive events of interest occur at a plurality of time periods in a data population consisting of all data elements in said event array having a first dimensional index identical to the first dimensional index of said first entry or said second entry.

11. The method of claim 3, wherein said step of analyzing comprises calculating a strength of correlation between at least two of said financial instruments based on the number of coactive events of interest occurring in said at least two of the financial instruments and displaying a correlation map illustrating the strength of correlation between said financial instruments by lines connecting representations of the financial instruments wherein the thickness of each of the lines is proportional to said calculated strength of correlation between respective financial instruments having associated representations connected by the line.

12. The method of claim 3, wherein said step of analyzing data comprises displaying a cross-correlogram between events of interest occurring in at least one of said financial instruments.

13. The method of claim 3, wherein said step of analyzing data comprises detecting at least one hidden Markov state sequence from said event array.

14. The method of claim 13, wherein said step of analyzing data further comprises displaying a cross-correlogram between events of interest occurring in one of

said financial instruments while said financial instrument is in one of said detected hidden Markov states.

15. The method of claim 1, wherein said step of analyzing data comprises plotting at least a portion of said data elements in said financial instrument data array for visual analysis.

16. The method of claim 1, wherein said analyzing step (d) comprises providing a dimension number representing the number of dimensions in which to model said financial instrument data and performing a singular valued decomposition on said selected array to decompose said financial instrument data array into a number of eigenmodes corresponding to said dimension number.

17. A method for analyzing data pertaining to a plurality of financial instruments traded on a financial market, comprising the steps of:

(a) arranging the financial instrument data in an array of data elements, wherein said financial instrument data array comprises data pertaining to the financial instruments over a plurality of time periods and wherein each data element of the array has a respective first dimensional index corresponding to a respective one of the financial instruments and a respective second dimensional index corresponding a respective one of said plurality of time periods;

(b) providing a dimension number representing the number of dimensions in which to model said financial instrument data;

(c) performing a singular valued decomposition on said financial instrument data array to decompose said financial instrument data array into a number of eigenmodes corresponding to said dimension number; and

(d) analyzing said decomposed data to determine relationships between at least two of said financial instruments.

18. The method of claim 17, wherein said analyzing comprises visually displaying for at least one of said eigenmodes a representation of each of said financial instruments participating in said displayed eigenmode.

19. The method of claim 18, wherein a parameter of each representation of a respective financial instrument indicates the amount of the respective financial instrument's participation in said displayed eigenmode.

20. A method for analyzing data pertaining to a plurality of financial instruments traded on a financial market comprising the steps of:

(a) arranging the financial instrument data in an array of data elements, wherein said financial instrument data array comprises data pertaining to the financial instruments over a plurality of time periods and wherein each data element of the array has a respective first dimensional index corresponding to a respective one of the financial instruments and a respective second dimensional index corresponding a respective one of said plurality of time periods;

(b) selecting a reference financial instrument;

(c) detecting any primary event of interest occurring in a data population consisting of all data elements in said financial instrument data array having a first dimensional index corresponding to the first dimensional index of said reference financial instrument;

(d) providing a data window corresponding to a number of said time periods before and after each of said detected primary event of interest within which to search for secondary events of interest;

(e) detecting any secondary event of interest occurring in a region of said financial instrument data array having a first dimensional index corresponding to the first dimensional index of at least one of said financial instruments not selected as said reference financial instrument and having a second dimensional index corresponding to a time period of observations occurring within said data window of said at least one primary event of interest detected during said detecting step (c); and

(f) displaying a sequence of visualizations, wherein the number of visualizations displayed has a time duration equal to said data window size, wherein each visualization corresponds to one of said time periods before or after an occurrence of said at least one detected primary event of interest, wherein each visualization comprises a representation of said at least one of said financial instruments for which secondary events of interest are detected in said detecting step (e) and a parameter of said representation of said financial instrument indicates the frequency with which said secondary events of interest occur in said

financial instrument the corresponding number of time periods before or after said detected primary event of interest.

21. A system for analyzing data pertaining to a plurality of financial instruments traded on a financial market comprising:

a data storage for storing the financial instrument data in an array of data elements, each data element of the array having a respective first dimensional index and a respective second dimensional index;

an event detector for detecting events of interest in said financial instrument data array;

a data transformer for storing as entries said detected events of interest into an event array in binary format, the event array having the same dimensions as said financial instrument data array; and

a data analyzer for analyzing data in one array selected from the group consisting of said financial instrument data array and said event array, to determine correlations between said detected events of interest.

22. The system of claim 21, wherein said financial instrument data array comprises an array of closing prices for said plurality of financial instruments over a plurality of time periods.

23. The system of claim 22, wherein said first dimensional index corresponds to said plurality of financial instruments and said second dimensional index corresponds to said plurality of time periods.

24. The system of claim 23, wherein said event detector further comprises:

a statistical calculator for calculating a statistical mean and statistical standard deviation from a data population consisting of all of the data elements in said financial instrument data array having identical first dimensional indexes, for each of said first dimensional indexes; and

a comparator for determining for each data element in said financial instrument data array whether the data element exceeds, by a predetermined number of said standard deviations, the mean of the data population, denominating such a data element an event.

25. The system of claim 24, wherein each entry stored by said data transformer in said event array corresponds to a respective one of the data elements of the financial instrument data array and has the same first and second dimensional indexes as the corresponding data element in said financial instrument data array and wherein said data transformer stores a logical "one" at a location in said event array having the first and second dimensional indexes of the corresponding data element when the corresponding data element is denominated an event and stores a logical "zero" at a location in said event array having the first and second dimensional indexes of the corresponding data element when the corresponding data element is not denominated an event.

26. The system of claim 23, wherein said event detector determines whether a first data element in said financial instrument data array exceeds, by a threshold amount, a second data element in said financial instrument data array wherein said second data

element has an identical first dimensional index as said first data element and a second dimensional index corresponding to an earlier point in time than the second dimensional index of said first data element and denominates said second data element an event.

27. The system of claim 26, wherein each entry stored by said data transformer in said event array corresponds to a respective one of the data elements of the financial instrument data array and has the same first and second dimensional indexes as the corresponding data element in said financial instrument data array and wherein said data transformer stores a logical "one" at a location in said event array having the first and second dimensional indexes of the corresponding data element when the corresponding data element is denominated an event and stores a logical "zero" at a location in said event array having the first and second dimensional indexes of the corresponding data element when the corresponding data element is not denominated an event.

28. The system of claim 23, wherein said data analyzer detects said events of interest that are coactive and determines whether the number of coactive events is statistically significant.

29. The system of claim 28, wherein said data analyzer detects said events of interest that are coactive by detecting instances where said events of interest are detected in at least a first and second entry of said event array, wherein said second data entry has a first dimensional index distinct from the first dimensional index of said first entry and

wherein said first and second entries each have second dimensional indexes corresponding to a simultaneous time period.

30. The system of claim 29, wherein said data analyzer detects said events of interest that are coactive by detecting instances where said coactive events of interest occur at a plurality of time periods in a data population consisting of all data elements in said event array having a first dimensional index identical to the first dimensional index of said first entry or said second entry.

31. The method of claim 23, wherein said data analyzer calculates a strength of correlation between at least two of said financial instruments based on the number of coactive events of interest occurring in said at least two of the financial instruments and displays a correlation map illustrating the strength of correlation between said financial instruments by lines connecting representations of financial instruments wherein the thickness of each of the lines is proportional to said calculated strength of correlation between respective financial instruments having associated representations connected by the line.

32. The system of claim 23, wherein said data analyzer displays a cross-correlogram between events of interest occurring in at least one of said financial instruments.

33. The system of claim 23, wherein said data analyzer detects at least one hidden Markov state sequence from said event array.

34. The system of claim 33, wherein said data analyzer displays a cross-correlogram between events of interest occurring in one of said financial instruments while said financial instrument is in one of said detected hidden Markov states.

35. The system of claim 21, wherein said data analyzer plots at least a portion of said data elements in said financial instrument data array for visual analysis.

36. The system of claim 21, wherein said data analyzer further comprises a receiver for receiving a dimension number representing the number of dimensions in which to model said financial instrument data and a decomposes for performing a singular valued decomposition on said selected array to decompose said financial instrument data into a number of eigenmodes corresponding to said dimension number.

37. A system for analyzing a data pertaining to a plurality of financial instruments traded on a financial market comprising:

a data storage for storing the financial instrument data arranged in an array of data elements, wherein said financial instrument data array comprises data pertaining to the financial instruments over a plurality of time periods and wherein each data element of the array having a respective first dimensional index corresponding to a respective one of the financial instruments and a respective second dimensional index corresponding to a respective one of said plurality of time periods;

a receiver for receiving a dimension number representing the number of dimensions in which to model said financial instrument data;

a decomposer for performing a singular valued decomposition on said financial instrument data array to decompose said financial instrument data array into a number of eigenmodes corresponding to said dimension number; and

a data analyzer for analyzing said decomposed data to determine relationships between at least two of said financial instruments.

38. The system of claim 37, wherein said data analyzer visually displays for at least one of said eigenmodes a representation of each of said financial instruments participating in said displayed eigenmode.

39. The system of claim 38, wherein a parameter of each representation of a respective financial instrument indicates the amount of the respective financial instrument's participation in said displayed eigenmode.

40. A system for analyzing data pertaining to a plurality of financial instruments traded on a financial market comprising:

a data storage for storing the financial instrument data in an array of data elements, wherein said financial instrument data array comprises data pertaining to the financial instruments over a plurality of time periods and wherein each data element of the array has a respective first dimensional index corresponding to a respective one of the financial instruments and a respective second dimensional index corresponding to a respective one of said plurality of time periods;

a selector for selecting a reference financial instrument;

a primary detector for detecting any primary event of interest occurring in a data population consisting of all data elements in said financial instrument data array having a first dimensional index corresponding to the first dimensional index of said reference financial instrument;

a receiver for receiving a data window corresponding to a number of said time periods before and after each of said detected primary event of interest within which to search for secondary events of interest;

a secondary detector for detecting any secondary event of interest occurring in a region of said financial instrument data array having a first dimensional index corresponding to the first dimensional index of at least one of said financial instruments not selected as said reference financial instrument and having a second dimensional index corresponding to a time period of observations occurring within said data window of said at least one primary event of interest; and

a data analyzer for displaying a sequence of visualizations, wherein the number of visualizations displayed has a time duration equal to said data window size, wherein each visualization corresponds to one of said time periods before or after an occurrence of said at least one detected primary event of interest, wherein each visualization comprises a representation of said at least one of said financial instruments for which secondary events of interest are detected and a parameter of said representation of said financial instrument indicates the frequency with which said secondary events of interest occur in said financial instrument the

corresponding number of time periods before or after said detected primary event of interest.